

Men in Wings

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The subject of ancient aeronautics has, surprisingly, been largely neglected by ancient historians. We know that ancient engineers developed impressive technologies for building, water-carrying, naval and military purposes, which required a practical understanding of natural forces and how to exert control over them. Greek and Latin texts provide a lot of information about ancient ideas on techniques and principles of flight. Although it is commonly supposed that all ancient accounts of flight are no more than fantasy, at various periods the Greeks and Romans were clearly preoccupied with turning that fantasy into reality. However, travel by air or sea would have presented a perilous prospect: 'in our folly we head for the sky itself', laments Horace (*Odes* 1.3.38). Nevertheless, intrepid explorers and adventurers regularly braved long ocean voyages. Others, it seems, persisted in investigating the possibility of flight.

Descriptions of flying in ancient literature refer predominantly to birds or to gods. In Homer and Virgil, winged deities and spirits throng the flight-paths of the ancient Mediterranean. Flying inspired a host of metaphors, like Homer's 'winged words', and 'wings of song'. Metaphors of poetic flight evoked literal images of ocean and earth – images grounded in the poets' actual experiences. The importance of keeping in mind the physical reality of Greece was stressed by the one time Regius Professor of Greek at Oxford, E.R. Dodds, who asked: 'How shall [we] enter into the concrete experience of Greek culture, material or literary, with no experience of the soil and landscape that gave it birth?' The vista of land and sea, apparently so near and yet so far, is familiar to anyone who ascends Mt. Etna or Parnassus, and might offer a strong inducement at least to dream of taking wing. Frequent and often detailed depictions of flight in ancient art and literature tell us how ancient aviators sought to turn that dream into reality. Here I look at one aspect of ancient aviation, Men in Wings.

Icarus

The history of aviation proper begins with the attempt by the father-and-son team, Daedalus and Icarus, to fly from Crete to Sicily. The story of their flight was widely told in antiquity. What underlies the legend? The Cretan Daedalus represents a figure of craftsman or inventor. As in the case of 'Homer', Daedalus came to represent a series of specialist practitioners over many centuries, inspired by contact with the Near East. Their accomplishments elicited reactions of wonder and admiration, and the name 'Daedalus' was specifically attached to feats of technical wizardry. So, in the Greek imagination, the palace at Knossos became the labyrinth designed by Daedalus; the Minotaur was the offspring of an artificial bull made by him; and an oft-repeated theme told of statues coming alive and walking, so life-like were the figures of human beings sculpted by him.

Daedalus was famed above all for the wings he fashioned from feathers and wax for himself and Icarus in their bid to fly from Crete. The Cretan connection gives us a clue to the historical background. It was the Cretans who, as early as the second millennium B.C., took the lead in adopting sail technology from the Egyptians, and according to Thucydides, Minos of Crete was the first man to establish a maritime empire. Daedalus's wife was named Naukrate, 'mistress of the sea', and the invention of the sail was attributed to Daedalus himself. The harnessing of wind-power for purposes of sea travel was clearly a genuine techno-

logical breakthrough, and it was only a matter of time before the principle of sail-power was applied to air travel. A vase-painting from the sixth century B.C. captures Daedalus en route to Sicily – a destination with recurring significance for ancient aeronautics. Daedalus' flight fired the imagination of aviators ancient and modern, but his successful design of wings eluded future generations despite detailed attempts at reconstruction, such as on the Roman panel of the second century A.D. from Villa Albani and in Ovid's famous description (*Metamorphoses* 8. 189 f.):

He laid the feathers in a row, beginning with the smallest, short following long to form a curve...Then he tied them middle and bottom with string and wax, and, so fastened, he arched them slightly to imitate real birds' wings...When the finishing touches had been put on his work, the craftsman himself balanced his body between the two wings and hung poised, beating the air.

The fate of Icarus, who fell into the sea and drowned, was bound to dampen enthusiasm for such high enterprise. But in the fifth century B.C., a surge of interest in human inventiveness led to a renewed study of aeronautics, which is reflected in the way flight it a dominant theme for Athenian playwrights. Daedalus featured in satyr-plays by Aeschylus and Sophocles and was the central character in plays by Aristophanes and Euripides. Flying was in the air! But the fate of Icarus was also a warning of the dangers of human beings failing to keep their feet on the ground: 'cleverness', warns a Euripidean chorus, 'is not wisdom'.

Aristophanes' *Birds*

Aristophanes enjoyed poking fun at scientists and inventors, and those who tried to fly were ripe targets for being brought down to earth with comic ridicule. The very idea of bringing men on stage sporting artificial wings was irresistible. In his *Birds* of 414 B.C. he has the two heroes set off to found a new city in the sky, and the chorus is made to represent all kinds of birds. They make a convincing case (*Birds* 785-97 in B.B. Rogers' translation) for the practical usefulness of wings:

*Never need a Patrocleides, sitting here, his garment stain;
When the dire occasion seized him, he would off with
might and main
Flying home, then flying hither, lightened and relieved,
again...*

With wings you could avoid boredom, tiredness and hunger, obey a pressing call of nature, even take the opportunity to dally with an old girlfriend while her husband sat with VIPs in the front row of the theatre! Eventually the heroes themselves come on stage with wings attached, and later the herald warns them to expect an influx of new citizens – all requiring wings! Not only were must there have been wings everywhere on stage, but cratefuls of spares as well. Between rehearsals, chorus members could hardly have resisted testing out their aerodynamic properties on the slopes of the auditorium.

Life and death experiments

But the emphasis on wings as the means to flight suggests that

actual attempts at flight may have suffered from attempting to emulate birds too closely. Mere possession of wings is no guarantee of successful flight. Experimental attempts to fly with wings have continued into recent times. There are several recorded instances from the Middle Ages which suggest a useful analogy with ancient attempts. The most likely outcome is exemplified by the enterprising attempt by an eleventh-century Arab scholar called Al-Djawhari, who climbed onto the roof of a mosque with two large wings made from wood fastened to his body. Launching himself into the air, he plummeted to the ground and died instantly. Other would-be fliers were luckier. Several accounts survive of Giovanni Danti, who was dubbed the 'Daedalus of Perugia'. In 1498 Danti provided a memorable spectacle by using wings to fly across the main square of Perugia from a high bell-tower, suffering no more than a broken leg when he crashed onto the roof of the church opposite.

No ancient Athenian seems to have attempted a similar feat in the agora, perhaps because there were no buildings high enough to launch themselves from. Adventurers were more likely to head to the suburb of Kerameikos with its multi-storey tenement-blocks. We hear of a building there called the Tall Tower, a place where would-be fliers could risk breaking more than their legs: in Aristophanes' *Frogs* (134) when Herakles recommends that Dionysos jump from there, the latter exclaims 'But I'd smash up a good pair of brains!' Most would-be flyers would choose to adopt a less precipitate approach. For instance, Lucian's Icaromenippus learned to fly gradually, jumping from progressively higher and higher points:

I first tried out the wings by jumping up and down, working my arms and doing what geese do, lifting myself along the ground and running on tiptoe as I flew. When this method began to work well, I experimented more boldly. I climbed up the acropolis and dropped down the cliff right into the theatre. When I had flown down without mishap, I tried out greater heights, taking off from Parnes or Hymettus, flying to Geraneia, and then up to Acrocorinth, over Pholoe and Erymanthus, clear to Taygetus.

Others will have been put off sooner by the painful consequences. The physician who composed the Hippocratic treatise *On Fractures*, dated to around the end of the fifth century, actually specifies a class of patients as 'those who have made a jump from a high place'. He goes on to describe in gruesome medical detail the kind of injuries sustained through their foolhardiness:

They come down violently on their heel, get the bones separated, with extravasation from the blood vessels since the flesh is contused about the bone, so that swelling and severe pain result.

To try to fly by flapping with artificial wings is in fact an aeronautically unsound procedure, prone to result in fatality. However, Greeks had one regular opportunity to experiment with such flying devices without keen regard to safety. The annual event at Leucas called the Criminal's Leap was described thus by Strabo (10.2.9):

It was an ancient custom among the Leucadians, at the annual sacrifice in honour of Apollo, for a criminal to be flung from an outpost of rock for the sake of averting general misfortune. Wings and birds of all kinds were attached to him to lighten the leap by their fluttering. A number of men were stationed all round below the rock in small boats to haul the victim in and make haste to escort him outside their borders.

It must have been like bungee-jumping without a bungee! It was only fair that the criminals who found a way of surviving the Leap were sent into exile and not killed. The obvious thing to use in these circumstances would be not wings, but a parachute of some kind. A Persian innovation, the parasol, made this a real

option: the North Doorway at Persepolis has a relief carving illustrating a splendid example. Parasols became a fashion accessory in classical Athens, and one was solemnly paraded at the women's festival of Skirophoria. In *The Greek Myths* Robert Graves traces a connection between this custom and the story of Skiron, the jolly giant on the cliff who commanded passers-by to wash his feet, then kicked them into the sea. When Theseus came by, it was Skiron's turn for the high jump. Graves suggests that Skiron (whose name could mean 'parasol') may have attempted a slow descent by exploiting the wind-resistant properties of a linen membrane stretched over a rigid framework: in other words, a hang-glider!

Because most such experiments led nowhere, the ancients tended to believe that asking someone to fly was demanding the impossible. Nero's demands in this respect exemplified his tyrannical megalomania. We learn from Dio Chrysostom that

if Nero ordered someone to fly, that man would undertake to do it, and for a considerable time he would be maintained in the imperial household in the belief that he would fly. (Discourses 21.9)

Such imperial caprice meant that fatal experiments continued, and Suetonius succinctly describes the grisly result of one such attempt made at a Neronian banquet:

At his very first attempt, 'Icarus' fell to earth next to the imperial couch, spattering the emperor with his blood.

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